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09/678,326	10/03/2000	Naoki Hanada	24402	4814

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EXAMINER

AGGARWAL, YOGESH K

ART UNIT	PAPER NUMBER
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2615

DATE MAILED: 05/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/678,326

Applicant(s)

HANADA ET AL.

Examiner

Yogesh K Aggarwal

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 October 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Response to Amendment

- a) The cancellation of claims 1-4 and addition of new claims 5-11 is acknowledged.
- b) Applicant's arguments with respect to new claims 5-11 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 5-8, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Higuchi et al. (US Patent # 6,254,531).

[Claim 5]

Higuchi discloses in the prior art section an image pickup apparatus having a moving-picture pickup mode in which a moving picture is picked up (figures 9 and 10 disclose a CCD 1 during a moving image pick-up mode, col. 1 lines 62-67), the apparatus comprising:

an interline type charge-coupled device (col. 1 lines 62-64, figure 9: 1) having a frame in which a first plurality of lines (figure 9, lines marked 0+1, 2+3, 4+5, representing the odd field correspond to a first plurality of lines) each having a first plurality of pixels (figure 9: Mg) are arranged and the first plurality of lines include a second plurality of pixels (figure 9: Cy), and mixing and reading out a third plurality of pixels [figure 9 discloses the odd and even pixels are mixed and then read as disclosed in figure 10 (C)] that extend over a second plurality of lines (figure 9, lines marked 1+2, 3+4, 5+6, representing the even field correspond to a second

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plurality of lines) among the first plurality of lines in the moving-picture pickup mode (col. 1 lines 46-64, figures 10C).

Higuchi teaches a still image mode in the prior art section but does not explicitly teach a still-picture pickup mode having the following limitations. However the first embodiment of Higuchi's invention (figures 1 and 2 shows the content of still image data formed from the foregoing CCD12, col. 6 lines 1-2) teaches the following limitations, wherein the apparatus comprises:

(a) incident-light quantity adjusting means (figure 1: 36) for adjusting a quantity of light incident upon the charge-coupled device (col. 6 lines 52-59);

(b) driving means (figure 1: 38) for driving the incident-light quantity adjusting means; control means (figure 1: 20) for controlling the driving means (figure 1: 38) to allow the incident-light quantity adjusting means (figure 1: 36) to intercept the incident light upon the charge-coupled device when the moving picture pickup mode is replaced with the still-picture pickup mode (col. 6 lines 59-63)[The freeze switch 16 is pressed to display a still image as disclosed in col. 5 lines 22-24, so when the freeze switch is pressed the shielding device 36 intercepts the incident light upon the charge-coupled device 12, when the moving picture pickup mode is replaced with the still-picture pickup mode as claimed];

(c) field image reading-out means (figure 1: 20) for sequentially reading out a first field image (figure 2B) and a second field image (figure 2C) without mixture [Figures 2B and 2C disclose the ODD and EVEN field data read out of the CCD 12 without mixing as claimed and stored therein memories 23(25) and 24], wherein the first field image comprises lines each being one of respective adjacent two lines of the first plurality of lines (Figure 2B discloses the first field

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image comprising adjacent lines) of a frame image read out from the charge-coupled device before the incident-light quantity adjusting means intercepts the incident light upon the charge-coupled device and the second field image comprises lines each being the other of the respective adjacent two lines (col. 6 lines 59-63, Figure 2C discloses the second field image comprising adjacent lines) [The freeze switch 16 is pressed to display a still image as disclosed in col. 5 lines 22-24, so when the freeze switch is pressed the shielding device 36 intercepts the incident light upon the charge-coupled device 12, when the moving picture pickup mode is replaced with the still-picture pickup mode]; and

(d) still-picture generating means for adding the first field image and the second field image to generate a still-picture frame image (figures 2D and 2E disclose adding the first field image and the second field image to generate a still-picture frame image).

Therefore taking the combined teachings of Higuchi's prior art and the first embodiment of his invention it would have been obvious to one skilled in the art to have been motivated to incorporate the limitations (a)-(d) above relating to the still image mode. The benefit of doing so would be to compensate for the shake of the endoscope (during the conversion from moving image to the still image mode) during the time lag of 1/60 second between the odd field image and even field image which are used to form the one-frame image in the moving pick-up mode in figure 10(c).

[Claim 6]

The image pickup apparatus according to claim 5, further comprising: memory means (figure 1: 23, 24, 25, 30, 31) for storing pixel data that corresponds to the frame image read out from the charge-coupled device before the incident-light quantity adjusting means (figure 1: 36) intercepts

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the incident light upon the charge-coupled device wherein the field image reading-out means reads out the first and second field images based on the pixel data that corresponds to the frame image stored in the memory means (col. 6 lines 41-63) [The freeze switch 16 is pressed to display a still image as disclosed in col. 5 lines 22-24, so when the freeze switch is pressed the shielding device 36 intercepts the incident light upon the charge-coupled device 12, when the moving picture pickup mode is replaced with the still-picture pickup mode].

[Claim 7]

The image pickup apparatus according to claim 5, further comprising:

display-format converting means (figure 1: 20) for converting a first picture-display format (moving image) into a second picture-display (still image) format with respect to the pixel data that corresponds to the frame image read out from the charge-coupled device before the incident-light quantity adjusting means intercepts the incident light upon the charge-coupled device (col. 1 lines 62-67)[When the freeze switch 16 is pressed the display-format changes from a first picture-display format which is the moving image into a second picture-display format i.e. the still image. Further as disclosed in col. 6 lines 59-63 when the freeze switch is pressed the incident-light adjusting means 36 intercepts light before it switches to the still image mode]

[Claim 8]

Claim 8 corresponds to claim 7. Therefore claim 8 is analyzed and rejected based upon the corresponding claim 7.

[Claim 11]

The image pickup apparatus according to claim 5, wherein the second plurality of lines are two lines adjacent to each other in the vertical direction (figure 9 discloses that the second plurality of

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lines on the right side comprising Even field represented by 1+2 are adjacent in the vertical direction) and the third plurality of pixels are two pixels adjacent to each other in the vertical direction (As discussed above, figure 9 discloses the third plurality of pixels which are obtained by mixing the 1 and 2 lines are two pixels adjacent to each other in the vertical direction as claimed).

2. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Higuchi et al. (US Patent # 6,254,531) as applied to claims 5-8 above and further in view of Sasaki (US Patent # 5,459,520).

[Claims 9 and 10]

Higuchi teaches the limitations of claims 5-8 but fails to teach "... wherein the display-format converting means comprises horizontal pixel density converting means that converts the first picture-display format that does not indicate a tetragonal lattice into the second picture-display format that indicates the tetragonal lattice".

However Sasaki teaches that these limitations are well known and used in the art (col. 11 lines 30-38, figure 1: 4 and 5 serves as a display-format converting means)[The external computer 12 disclosed in figure 1 serves as a display means displaying the image converted from first picture-display format that does not indicate a tetragonal lattice into the second picture-display that indicates the tetragonal lattice as claimed].

Therefore taking the combined teachings of Higuchi and Sasaki it would have been obvious to one skilled in the art at the time of the invention to have been motivated to have a display-format converting means comprises horizontal pixel density converting means that converts the first picture-display format that does not indicate a tetragonal lattice into the second

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picture-display format that indicates the tetragonal lattice. Doing so would be advantageous because the output image obtained is excellent that is neither expanded nor contracted as taught in Sasaki (col. 11 lines 35-38).

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yogesh K Aggarwal whose telephone number is (703) 305-0346. The examiner can normally be reached on M-F 9:00AM-5: 30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's primary examiner, Vu Le can be reached (703) 308-6613. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.


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YKA

March 31, 2004


VULE
PRIMARY EXAMINER